

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 1994	Park: Shenandoah NP
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Permit#: SHEN1994AJLW	
Park-assigned Study Id. #: unknown	
Project Title: Variation in the Aggressive Behavior and Testosterone Levels of the Red-backed Salamander	
Permit Start Date: Jan 01, 1998	Permit Expiration Date Jan 01, 1998
Study Start Date: Jan 01, 1993	Study End Date Jan 01, 1994
Study Status: Completed	
Activity Type: Other	
Subject/Discipline: Ecology (Aquatic, Marine, Terrestrial)	
Objectives: The study was designed to test hypotheses about variation in the aggressive behavior of the male red-backed salamander, <i>Plethodon cinereus</i> . (1) Within populations, we tested the hypothesis that territorial residents and intruders would vary their levels of aggression over different seasons. (2) Between populations, we tested the hypothesis that aggression would be higher in a population where <i>P. cinereus</i> is sympatric with an aggressive competitor (<i>P. shenandoah</i>) than when a similar-sized congener is absent.	
Findings and Status: Preliminary analyses of the data (taken from summer 1993 through autumn 1994) have determined that individuals from Hawksbill Gap (an area where <i>P. cinereus</i> is in competition with a similar-sized congener, <i>Plethodon shenandoah</i>) are more aggressive than individuals from MLBS (where there are no similar-sized congeners). Also, the aggressiveness is variable over seasons: individuals from Hawksbill Gap are more aggressive (bite more) in the summer (the non-breeding season) than in the spring or autumn (breeding season).;Censuses of Hawksbill Gap were conducted while collecting. For spring 1994, there were 36 tailed males, 56 tailless males, 62 tailed females, 25 tailless females, 4 tailed one-year juveniles, 3 tailless one-year juveniles, 8 tailed two-year juveniles, and 10 tailless two-year juveniles. For summer 1994, there were 66 tailed males, 22 tailless males, 41 tailed females, 19 tailless females, 8 tailed hatchlings, 6 tailed one-year juveniles, 1 tailless one-year juveniles, 17 tailed two-year juveniles, and 5 tailless two-year juveniles. For autumn 1994, there were 44 tailed males, 23 tailless males, 57 tailed females, 20 tailless females, 5 tailed hatchlings, 4 tailless hatchlings, 11 tailed one-year juveniles, 3 tailless one-year juveniles, 6 tailed two-year juveniles, and 4 tailless two-year juveniles.	
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No	
Funding provided this reporting year by NPS: 0	Funding provided this reporting year by other sources: 1800
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or	

college	
Full name of college or university:	Annual funding provided by NPS to university or college this reporting year:
GRADUATE STUDENT ORG - USL	620